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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,718	12/16/2003	James J. Genova	213680.00007	3456

27160 7590 11/01/2006

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EXAMINER
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PHAM, LAM P

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8, 9, 10, 16, 18-21, 25-29, 35-37, 41-43, 49-50, 52-54, and 58-62 rejected under 35 U.S.C. 103(a) as being unpatentable over **Bergman et al.** (US 7042349) in view of **Kaufman** (US 6545608).

**Regards claim 1**, Bergman disclose a fire sensing apparatus (smoke detector 18), comprising:

a smoke sensor (40) for detecting a presence of smoke within a volume;

a tamper sensor (tamper switch 32) for detecting tampering (opening a detector case or removing the detector from a mounting base) to the apparatus, wherein the tampering prevents the apparatus from detecting the presence of smoke within the volume by disabling the detector; and

an alarm indicator (audible siren 48, lights and RF transmitter 46) for indicating an alarm condition in response to at least one of i.) a detection of the presence of smoke within the volume, and ii.) a detection of tampering to the apparatus as seen in Figures 1-3; col. 6, line 58 to col. 7, line 20.

Bergman fail to disclose the apparatus comprising a flame sensor for detecting the presence of a flame within the volume.

It has been known in the art of fire sensing to have both the flame sensor and smoke sensor in the same housing for detecting a fire that produces both flame and smoke in a volume as seen in the abstract of "Flame and smoke detector" of Sivathanu et al. (US 6111511).

In addition, Kaufman in "Smoking rules enforcement apparatus" teaches of a smoke detector (90) and flame detector (28) in the same housing for sensing a fire (UV light) and alarm indicator for indicating alarm conditions at a remote location as seen in Figures 7-8; col. 4, lines 41-67; col. 5, lines 1-17.

Thus, it would have been obvious to one of ordinary skilled in the art to incorporate a flame sensor into the apparatus of Bergman for detecting both flame and smoke within a volume and an alarm indicator for indicating the presence of a flame in addition to the alarm conditions above.

**Regards claim 2**, Kaufman discloses the flame sensor detects ultraviolet energy generated by flame to detect the presence of flame within the volume as seen in Figure 8; col. 4, lines 64-67 and col. 5, lines 11-5.

**Regards claim 3**, Kaufman discloses the flame sensor has an absence of sensitivity to electromagnetic radiation that normally occurs within the volume except from the flame as seen in col. 1, lines 51-60.

**Regards claim 4**, Jordal discloses a smoke sensor for detecting a presence of smoke within the volume, wherein the alarm indicator indicates the alarm condition in response to a detection of the presence of smoke within the volume as seen in claim 1.

**Regards claim 8,** Bergman disclose the alarm indicator (audible, light) indicates the alarm condition to persons within a vicinity of the apparatus using at least one of an audible alarm (48), a visual alarm (light indicator) as seen in Figure 2; col. 7, lines 7 to col. 8, line 4.

**Regards claim 9,** Bergman disclose a transmitter (46) for transmitting the alarm condition to a remote monitor (control panel 14) as seen in Figures 1-2; col. 8, lines 6-20.

**Regards claim 10,** Bergman disclose the receipt of the alarm condition by the remote monitor generates at least one of an audible alarm, a visual alarm at a location of the remote monitor to indicate the alarm condition to the remote monitor as seen in col. 10, lines 13-39.

**Regards claim 16,** Bergman fail to disclose the apparatus has an appearance of an object used for different purpose within the volume, to camouflage the apparatus.

Kaufman disclose a camouflage for camouflaging an appearance of the apparatus wherein the camouflage provides the apparatus with the appearance of an object (sprinkler unit 10, mock room deodorizer 50, vent frame, smoke detector 90) used for a different purpose within the volume as seen in Figures 1-7; col. 2, lines 50-67; col. 3, lines 1-67; col. 4, lines 1-57.

In view of Kaufman teaching, it would have been obvious to one of ordinary skilled in the art to camouflage the apparatus or the sensing unit as a different object in order to deceive a person attempt to defeat the function of the sensing unit.

**Regards claim 18**, Bergman disclose the apparatus (18) is positioned within the volume top floor such that the apparatus monitors substantially an entire contents of the volume as seen in Figure 1.

**Regards claim 19**, Bergman-Kaufman combined teaching disclose a fire-sensing system, comprising:

a fire sensor (flame sensor 28, smoke detector 90 or 40) for detecting a presence of at least one of flame and smoke within volume;

tamper countering structure (switch 32) for countering attempts to prevent the fire sensor from detecting the presence of the at least one of flame and smoke within the volume; and

a transmitter (46) for transmitting an alarm notification upon detection of at least one of i.) the presence of at least one of flame and smoke within the volume, and ii.) an attempt to prevent the fire sensor from detecting the presence of the at least one of flame and smoke within the volume as seen in claims 1, 9 above for explanation.

**Regards claim 20**, Bergman-Kaufman teaching disclose the fire sensor comprises:

a flame sensor (28) for detecting ultraviolet energy generated by flame to detect the presence of flame within the volume; and

a smoke sensor (90 or 40) for detecting the presence of smoke within the volume as seen in explanation for claims 1-2.

**Regards claim 21**, Kaufman discloses the flame sensor has an absence of

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sensitivity to electromagnetic radiation that normally occurs within the volume except from the flame as seen in col. 1, lines 51-60; see claim 3 for explanation.

**Regards claim 25**, Kaufman discloses the tamper countering structure comprises:

camouflage for camouflaging an appearance of the system, wherein the camouflage provides the system with the appearance of an object (sprinkler unit 10, mock room deodorizer 50, vent frame, smoke detector 90) used for a different purpose within the volume as seen in Figures 1-7; col. 2, lines 50-67; col. 3, lines 1-67; col. 4, lines 1-57.

In view of Kaufman teaching, it would have been obvious to one of ordinary skilled in the art to camouflage the apparatus or the sensing unit as an object in order to deceive a person attempt to defeat the function of the sensing unit.

**Regards claim 26**, Bergman and Kaufman fail to disclose expressly the tamper countering structure comprises:

a shock-resistant enclosure for the system for protecting the system against shock.

It has been known that a typical detector's housing withstand a certain amount of shock applied whether the housing is made out of plastic or metal as a matter of physical property of the material, thus it would have been obvious to one of ordinary skilled in the art to realize that the housing of detector is a shock-resistant enclosure for countering tampering attempt to damage the sensor.

**Regards claim 27**, Bergman disclose the transmitter transmits the alarm notification to persons (at control panel 14) within a vicinity of the system using at least one of an audible alarm, a visual alarm at the remote receiver as seen in Figure 1; col. 10, lines 13-39.

**Regards claim 28**, Bergman disclose the transmitter transmits the alarm notification to a remote receiver (control panel 14) as seen in Figure 1; see claim 27.

**Regards claim 29**, Bergman disclose the receipt of the alarm condition by the remote monitor (14) generates at least one of an audible alarm, a visual alarm at a location of the remote monitor to indicate the alarm condition to the remote monitor as seen in Figure 1; col. 10, lines 13-39; see claim 10.

**Regards claim 35**, referring to claim 1 for explanation.

**Regards claim 36**, referring to claim 3 for explanation.

**Regards claim 37**, referring to claim 4 for explanation.

**Regards claim 41**, referring to claim 8 for explanation.

**Regards claim 42**, referring to claim 9 for explanation.

**Regards claim 43**, referring to claim 10 for explanation.

**Regards claim 49-50**, referring to claim 16 for explanation.

**Regards claim 52**, referring to claim 18 for explanation.

**Regards claim 53**, referring to claim 19 for explanation.

**Regards claim 54**, referring to claim 21 for explanation.

**Regards claim 58**, referring to claim 25 for explanation.

**Regards claim 59**, referring to claim 26 for explanation.



**Regards claim 60**, referring to claim 27 for explanation.

**Regards claim 61**, referring to claim 28 for explanation.

**Regards claim 62**, referring to claim 29 for explanation.

3. Claims 5, 17, 22, 38, 51, 55 rejected under 35 U.S.C. 103(a) as being unpatentable over Bergman in view of Kaufman and **Rodhall** et al. (US 5463595).

**Regards claim 5**, Bergman disclose the tamper sensor comprises switch (32) for detecting the opening of the case housing or the removing the detector from a mounting base but fails to disclose the tamper sensor comprises a motion sensor for detecting motion to the apparatus.

It has been known in the art to use shock or motion sensors for detecting tampering to a housing or structure of a sensing device or apparatus.

Rodhall et al. in "Portable security system for outdoor sites" teach of using a motion sensor (14) and shock sensor (88) for detecting tampering with the portable alarm unit (10) as seen in Figures 1, 3; col. 7, lines 61-67.

In view of Rodhall teaching, it would have been obvious to one of ordinary skilled in the art to alternatively incorporate the motion or shock sensors into the fire sensing apparatus of Jordal-Kaufman in order to provide effective mechanism for detecting tampering with the apparatus.

**Regards claim 17**, Bergman fail to disclose expressly the apparatus is resistant to shock, wherein shock to the apparatus is indicative of an attempt to tamper with the apparatus.

However, it has been known in the art that every sensor or detector housing is resistant to certain level of shock or vibration.

Rodhall teach of using a shock sensor (88) in the portable intrusion sensor unit for detecting tampering with the unit as seen in figure 3; col. 7, lines 61-67.

In view of Rodhall teaching, it would have been obvious to one of ordinary skilled in the art to implement a shock sensor for sensing a shock applied to the apparatus for indicating an attempt to tamper with the apparatus.

**Regards claim 22**, Jordal discloses the tamper countering structure comprises an unauthorized removal detection switch but fails to disclose the structure comprises a motion sensor for detecting motion to the apparatus, wherein a detection of motion to the system is indicative of an attempt to prevent the tire sensor from detecting the presence of the at least one of flame and smoke within the volume. It has been known in the art to use shock or motion sensors for detecting tampering to a housing or structure of a sensing device or apparatus.

**Rodhall et al.** in "Portable security system for outdoor sites" teach of using a motion sensor (14) and shock sensor (88) for detecting tampering with the portable alarm unit (10) as seen in Figures 1, 3; col. 7, lines 61-67.

In view of Rodhall teaching, it would have been obvious to one of ordinary skilled in the art to alternatively incorporate the motion or shock sensors into the fire sensing apparatus of Jordal-Kaufman in order to provide effective mechanism for detecting tampering with the apparatus.

**Regards claim 38**, referring to claim 5 for explanation.

**Regards claim 51**, referring to claim 17 for explanation.

**Regards claim 55**, referring to claim 22 for explanation.

4. Claims 6, 23, 39, 56 rejected under 35 U.S.C. 103(a) as being unpatentable over **Bergman** in view of **Kaufman** and Swanson (US 5923115):

Regards claim 6, Bergman fail to disclose the tamper sensor comprising a visible light sensor, wherein an absence of visible light to the visible light sensor is indicative of an attempt to tamper with the apparatus.

It has been known in the art of tampering detection to use light sensor to detect intrusion or removal of a device which is tampering.

Swanson in "System for sensing removal of utility meter from the socket" teaches of a tampering sensor comprising visible light or optical sensor for detecting tampering with the meter wherein an absence of the visible light from an emitter (16) to the visible light sensor (18) is indicative of an attempt to tamper with the meter as seen in Figure 1; col. 4, line 11 to col. 5, line 14.

In view of Swanson teaching, it would have been obvious to one of ordinary skilled in the art to include a tampering sensor comprising a light sensor for sensing tampering to the apparatus of Jordal and prevent the apparatus from operating properly.

**Regards claim 23, Bergman** fail to disclose the tamper countering structure comprises:

a visible light sensor, wherein an absence of visible light to the visible light sensor is indicative of an attempt to tamper with the apparatus.

Swanson in "System for sensing removal of utility meter from the socket" teaches of a tampering sensor comprising visible light or optical sensor for detecting tampering with the meter wherein an absence of the visible light to the visible light sensor (18) is indicative of an attempt to tamper with the meter as seen in Figure 1; col. 4, line 11 to col. 5, line 14.

In view of Swanson teaching, it would have been obvious to one of ordinary skilled in the art to include a tampering sensor comprising a light sensor for sensing tampering to the apparatus of Jordal and prevent the apparatus from operating properly.

**Regards claim 39**, referring to claim 6 for explanation.

**Regards claim 56**, referring to claim 23 for explanation.

5. Claims 11-15, 30-34, 44-48, 63-67 rejected under 35 U.S.C. 103(a) as being unpatentable over Bergman in view of **Kaufman** and **Weiss** et al. (US 5905438).

**Regards claim 11**, Bergman and Kaufman both fail to specifically disclose the transmitter transmits a status message to the remote monitor at periodic intervals.

Weiss et al. in same field of endeavor teach of "Hazardous remote detecting system" comprising hazardous detecting units (20) for detecting smoke, gas and flame that transmit a status message (battery status) to a remote monitoring unit (50) at periodic intervals to conserve energy as seen in Figures 1-3; col. 5, lines 1-67; col. 6, lines 1-67.

In view of Weiss teaching, it would have been obvious to one of ordinary skilled in the art to have the fire sensing apparatus of Bergman and Kaufman to periodically

transmit a status message to the remote monitoring unit for conserving power as well as reporting conditions from the sensor units.

**Regards claim 12**, Bergman and Kaufman fail to disclose an absence of receipt of the status message by the remote monitor (14) within the periodic interval is indicative of an alarm condition (low battery, smoke/fire condition) associated with the apparatus, and wherein an absence of receipt of the status message by the remote monitor within the periodic interval generates at least one of an audible alarm, a visual alarm.

Weiss disclose that an absence of receipt of the status message (battery level) by the remote monitor within the periodic interval is indicative of an alarm condition (low battery) associated with the apparatus, and wherein an absence of receipt of the status message by the remote monitor within the periodic interval generates at least one of an audible alarm, a visual alarm and a tactile alarm at a location of the remote monitor to indicate the alarm condition to the remote monitor as seen in col. 7, lines 26-64.

In view of Weiss teaching, it would have been obvious to one of ordinary skilled in the art to incorporate the absence of the receipt of the status message by the remote monitor within periodic interval is indicative of an alarm condition as a way of communication to ensure proper functioning of the detecting unit.

**Regards claim 13**, Weiss disclose the status message includes information for identifying a location of a source (detecting unit ID) of the status message to the remote monitor as seen in col. 7, lines 10-20.

In view of Weiss teaching, it would have been obvious to one of ordinary skilled in the art to incorporate the status message includes information for identifying a location of a source of the status message to remote monitoring unit for identifying a location of transmitting source to a monitoring person.

**Regards claim 14,** Weiss disclose the status message includes information for identifying an existence of an alarm condition (battery level) to the remote monitor as seen in col. 7, lines 1-44.

**Regards claim 15,** Weiss disclose the status message includes information for identifying a type of alarm condition (battery level) to the remote monitor.

**Regards claim 30, Bergman and Kaufman** both fail to disclose the transmitter transmits a status message to the remote monitor at periodic intervals.

Weiss et al. in "Hazardous remote detecting system" teach of hazardous detecting units (20) for detecting smoke, gas and flame that transmit a status message (battery status) to a remote monitoring unit (50) at periodic intervals to conserve energy as seen in Figures 1-3; col. 5, lines 1-67; col. 6, lines 1-67.

In view of Weiss teaching, it would have been obvious to one of ordinary skilled in the art to have the fire sensing apparatus of Deacy and Kaufman to periodically transmit a status message to the remote monitoring unit for conserving power as well as reporting conditions from the sensor units.

**Regards claim 31,** Weiss disclose the status message includes information for identifying a location of a source (detecting unit ID) of the status message to the remote monitor as seen in col. 7, lines 10-20.

In view of Weiss teaching, it would have been obvious to one of ordinary skilled in the art to incorporate the status message includes information for identifying a location of a source of the status message to remote monitoring unit for identifying a location of transmitting source to a monitoring person.

**Regards claim 32**, Weiss disclose the status message includes information for identifying an existence of an alarm condition (battery level) to the remote monitor as seen in col. 7, lines 32-44.

**Regards claim 33**, Weiss disclose the status message includes information for identifying a type of alarm condition (battery level, alarm condition) to the remote monitor as seen in col. 6, lines 43-67; col. 7, lines 1-25.

**Regards claim 34**, Bergman and Kaufman fail to disclose an absence of receipt of the status message (battery level) by the remote monitor within the periodic interval is indicative of an alarm condition (low battery) associated with the apparatus, and wherein an absence of receipt of the status message by the remote monitor within the periodic interval generates at least one of an audible alarm, a visual alarm.

Weiss disclose that an absence of receipt of the status message (battery level) by the remote monitor within the periodic interval is indicative of an alarm condition (low battery) associated with the apparatus, and wherein an absence of receipt of the status message by the remote monitor within the periodic interval generates at least one of an audible alarm, a visual alarm and a tactile alarm at

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a location of the remote monitor to indicate the alarm condition to the remote monitor as seen in col. 7, lines 26-64.

In view of Weiss teaching, it would have been obvious to one of ordinary skilled in the art to incorporate the absence of the receipt of the status message by the remote monitor within periodic interval is indicative of an alarm condition as a way of communication to ensure proper functioning of the detecting unit.

**Regards claim 44**, referring to claim 11 for explanation.

**Regards claim 45**, referring to claim 12 for explanation.

**Regards claim 46**, referring to claim 13 for explanation.

**Regards claim 47**, referring to claim 14 for explanation.

**Regards claim 48**, referring to claim 15 for explanation.

**Regards claim 63**, referring to claim 30 for explanation.

**Regards claim 64**, referring to claim 31 for explanation.

**Regards claim 65**, referring to claim 32 for explanation.

**Regards claim 66**, referring to claim 33 for explanation.

**Regards claim 67**, referring to claim 34 for explanation.

***Allowable Subject Matter***

6. Claims 7, 24, 40, 57 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



***Response to Arguments***

7. Applicant's arguments with respect to claims 1-67 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

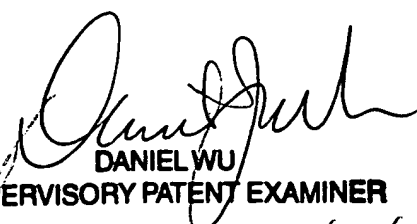
Jayaram (US 3352985) disclose a tamper-proof flame sensor control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lam P. Pham whose telephone number is 571-272-2977. The examiner can normally be reached on 10AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on 571-272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Lam Pham    October 23, 2006.

  
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SUPERVISORY PATENT EXAMINER  
10/30/06